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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/092,139

03/06/2002

William D. Tandy

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01/22/2008

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

01/22/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTOMail@traskbritt.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/092,139	<b>Applicant(s)</b> TANDY ET AL.	
	<b>Examiner</b> Victor S. Chang	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4,6,8,9,11,12,14,16,17,19,20,22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,8,9,11,12,14,16,17,19,20,22 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/4/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Introduction***

1. Applicants' amendments and remarks filed on 1/4/2008 have been entered. Claims 1, 9 and 17 have been amended. Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In response to the amendments, the Office action has been updated as set forth below. Rejections not maintained are withdrawn.

### ***Drawings***

4. Amended drawing filed 1/4/2008 has been entered.

### ***Claim Rejections - 35 USC § 112***

5. Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In independent claims 1, 9 and 17, the phrases "first outermost adhesive layer ... properties of a first type" and "second adhesive layer ... second properties different than the properties of the first type" are vague and indefinite, because it is unclear that the scope of properties being claimed. Clarification is required in the next reply.

***Rejections Based on Prior Art***

6. Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weng et al. [US 5972234] in view of Ishiwata et al. [US 5300172].

Weng's invention relates to a tape for marking a wafer (semiconductor device). A high-intensity energy beam is used to create a cavity or a mark through the tape. The tape is laminated to a top surface of the semiconductor substrate and exposed to an etchant to form a mark in the substrate [abstract]. Any suitable tape of polymeric based material, which can be easily patterned by high-intensity energy beams such as ultraviolet light or laser, can be used [col. 4, lines 27-33]. The marking tape adheres to a substrate to be marked [col. 2, line 64]. A release layer (flexible film) may be provided to cover the adhesive layer for protection during the laser marking process [col. 4, line 64 through col. 5, line 2]. The release layer may be formed of any suitable material such as polypropylene or PET [col. 5, lines 1-2].

For claim 1, Since Weng teaches that the marking tape adheres to the semiconductor substrate to be marked, it is an adhesive tape. Weng lacks teachings that the marking tape comprises 1) a material having a thermal expansion coefficient substantially similar to the semiconductor device, 2) two different adhesive layers, and 3) the first outermost adhesive layer is radiation curable and bonded to at least a portion of a semiconductor device. However, regarding 1), since Weng teaches a marking tape having substantially the same structure and composition for the same use as the instant invention, selecting a workable material having a similar thermal expansion coefficient substantially similar to the semiconductor device is

deemed to be an obvious routine optimization, dictated by the same use conditions. Regarding 2), in view of the amended Fig. 5, and applicants' statement that

“[0041] and [0049] clearly supports the claim limitation of presently amended independent claim 1 calling for "first mixture layer is formed of a type so as to cure and bond to a surface of a bare semiconductor die 20 upon exposure to a radiation source, whereupon it is laser markable" and "[u]pon exposure to radiation, the second adhesive layer can either cure onto the first mixture layer or, alternatively, lose its adhesive properties and facilitate peeling of carrier tape 4 from a wafer or surface of a bare semiconductor die 20"” [Remarks page 10],

Clearly, the distinct features or properties between the first and second adhesive layers are their respective outer surface properties which are inherently in contact with different materials, i.e., semiconductor substrate and carrier tape. Nothing in [0041] or [0049] provide any distinction in chemistry between the two layers. In fact, a single thicker adhesive layer would clearly read on the disclosed chemistry that “the second adhesive layer can ... cure onto the first mixture layer”. The examiner takes the position that since Weng's single-layer adhesive provides the same structural features at its outer surfaces and the recitation lacks any distinct chemistry between the two adhesive layers, Weng's single layered adhesive marking tape reads on the two adhesive layers of the claimed invention. Regarding 3), Ishiwata's invention relates to a surface-protection method during etching. Through the use of a radiation-curable adhesive tape at the time of etching, a tape is stuck (bonded) onto an adherend wafer (semiconductor device), then the radiation-curable adhesive layer is irradiation cured before the etching treatment, the cured adhesive has much enhanced etching resistance [col. 2, lines 49-57]. It would have been obvious to one of ordinary skill in the art to modify Weng's adhesive layer with Ishiwata's radiation-curable adhesive layer, motivated by the desire to obtain an enhanced etching resistance. Finally, since Weng teaches the same polypropylene or PET release layer for

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protection during the laser marking process, a workable peeling property is deemed to be obviously provided by practicing the invention of prior art.

For claim 3, since the surface of the semiconductor is not a structural element of instantly claimed laser-markable tape of claim 1, whether the surface of the semiconductor bears grinding marks or not bears no weight to the patentability. Further, even if it is considered, since Weng expressly teaches that the substrates includes a silicon wafer and any suitable electronic substrate materials that is utilized in the fabrication of electronic devices [col. 4, lines 18-20], Weng's teachings encompass the claimed limitation as well.

For claim 4, since Ishiwata's radiation-cured adhesive layer provides an enhanced etching resistance, it is interpreted as providing a permanent adhesion in the marking process of the semiconductor device.

For claim 6, since the prior art teaches the same use (marking a wafer or semiconductor device), the "homogeneous surface" of the adhesive layer outer surface is deemed to be obviously provided by practicing the same invention of the prior art.

For claim 8, Weng's polypropylene release layer is inherently translucent.

For claims 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24, since they have same scope of claimed limitations as claims 1, 3, 4, 6 and 8, they are also rejected for the same reasons.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/  
Primary Examiner, Art Unit 1794